Analysis of Cereal data K

Carl James Schwarz

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1 Introduction

What is the relationship between the calories in a serving of breakfast cereal and the placement of the cereal on the shelf in the supermarket?

2 Material and Methods

A sample of 23 cereals were sampled from a local grocery store and the nutritional information (e.g. number of grams of fat, protein, carbohydrates, etc.) and the number of calories per serving was extracted. The display shelf on which the cereal was stored was also recorded.

Regression analysis was used to look at the relationship between the calories per serving and the fat content per serving.

All computations were performed using R version 3.5.2 (2018-12-20).

3 Results

The data was screened for outliers and no unusal points were located.

Table 1 summarizes the calories per serving by shelf number.

Figure 1 shows a graphical display of the calories per serving.

There was no evidence of a difference in the mean calories per serving varied with the amount of fat (p=0.989). The estimated slope was 1.18 (SE 9.71).

Table 1: Summary statistics by shelf location

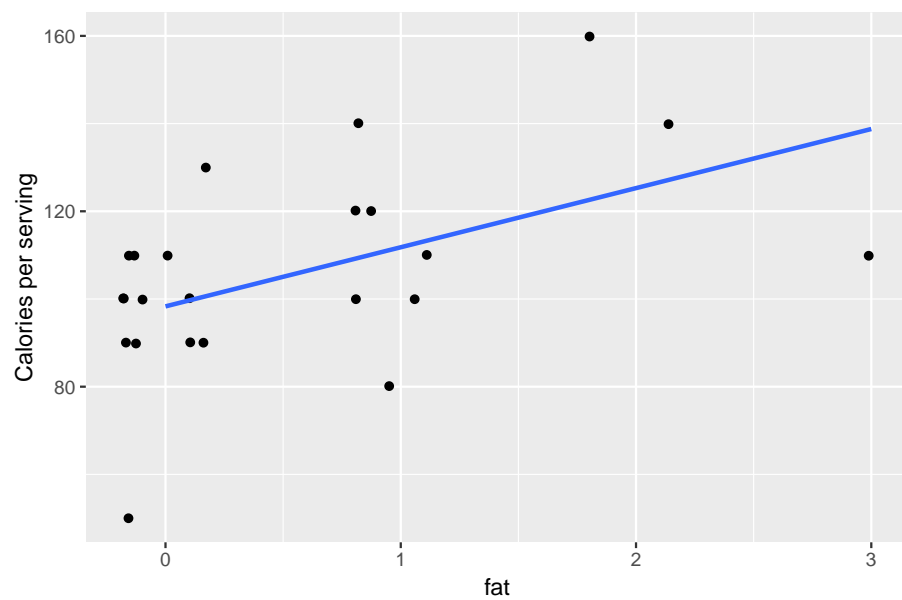| Shelf	n	Mean calories	Min calories	Max calories	SD calories
Low	4	105.0	100	110	5.8
Middle	7	107.1	90	120	11.1
High	12	106.7	50	160	30.8

Figure 1: Calories by shelf height

4 Summary

We found no evidence that the mean number of calories varied with fat content.